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| APPLICATION NO.            | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/019,116                 | 12/21/2001  | Katsuhiko Kumagawa   | 10873-846USWO       | 7808             |
| 23552                      | 7590        | 05/14/2004           | EXAMINER            |                  |
| MERCHANT & GOULD PC        |             |                      | LAO, LUN YI         |                  |
| P.O. BOX 2903              |             |                      | ART UNIT            | PAPER NUMBER     |
| MINNEAPOLIS, MN 55402-0903 |             |                      | 2673                | 7                |
| DATE MAILED: 05/14/2004    |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|------------------------------|------------------------|---------------------|
|                              | 10/019,116             | KUMAGAWA ET AL.     |
| Examiner                     | Art Unit               |                     |
| Lao Y Lun                    | 2673                   |                     |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 22 April 2004.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-83 is/are pending in the application.  
4a) Of the above claim(s) 32-36,53,60 and 74 is/are withdrawn from consideration.  
5)  Claim(s) 1-10,30,31,37-52,54-59,61,62,65,68-73,75 and 78-82 is/are allowed.  
6)  Claim(s) 11, 21-23, 25-29(claims 21 and 27 depend on claim 11), 66 and 76 is/are rejected.  
7)  Claim(s) See Continuation Sheet is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 21 December 2001 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_\_

Continuation of Disposition of Claims: Claims objected to are 12-20,24, 21-29(claims 21 and 27 depend on one of the claims 12-17), 63, 64, 67 and 77.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Species I(claims 1-30, 37-38, 42, 54-59, 61-73, 75-82 in Paper No. 7 is acknowledged.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11, 66 and 76 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibusawa(JP 11-183932).

Shibusawa teaches a display apparatus comprising plural pixel electrodes arranged in a matrix; a switching element(TFT, 38) connected to the pixel electrodes; a scanning electrode(34a, 34b); a picture signal electrode; an opposite electrode(35); a first storage capacitance(Cs1) and a second storage capacitance(Cs2)(see figures 4 and solution).

4. Claims 11, 27-29, 66 and 76 are rejected under 35 U.S.C. 102(b) as being anticipated by Kusafuka et al(5,995,074).

As to claims 11, 27-29, 66 and 76, Kusafuka et al teaches a display apparatus comprising plural pixel electrodes arranged in a matrix; a switching element(TFT, 6) connected to the pixel electrodes; a scanning electrode(2); a picture signal electrode; an opposite electrode(common electrode); a first storage capacitance(Cs) and a second storage capacitance(Cl<sub>s</sub>)(see figures 3 and column 1, lines 49-63).

As to claims 27-29, Kusafuka et al teach means for overlapping a voltage to the driving circuit of the scanning signal via the storage capacitance, scanning signal having more than four value and the voltage applied to the pixel electrode via the storage capacitance after applying the voltage via the switching element(TFT, 6)(see figures 3, 11A-11B; column 7, lines 63-68 and column 8, lines 1-30).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 21-23 and 25-26(claim 21 depends on claim 11) are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibusawa(JP 11-183932) in view of Kondo et al(5,598,285).

As to claims 21-23, 25 and 26, Shibusawa(JP 11-183932) fail to disclose a parallel monotonic capacitance is not formed between the pixel electrode and the opposite electrode via the display medium.

As to claims 21-23, 25-26, Kondo et al teach an LCD display comprising a parallel monotonic capacitance is not formed between the pixel electrode(1) and the opposite electrode(2) via the liquid crystal(50)(see figures 2(a), 17, 20; column 3, lines 54-63; column 14, lines 1-13 and column 17, lines 51-62). It would have been obvious to have modified Shibusawa with the teaching of Kondo, since Kondo et al teach the opposite electrode(common electrode) could be located on the same side or opposite side of a pixel electrode (see column 3, lines 54-63).

As to claim 23, Kondo et al teach an opposite electrode(2) is not at the same side of pixel electrode(1)(see figures 1a, 1b and column 7, lines 31-35).

7. Claims 27 and 29(claim 27 depends on claim 11) are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibusawa(JP 11-183932) in view of Nagata(JP 2-913A).

Shibusawa fails to teach means for overlapping a voltage to the driving circuit of the scanning signal via the storage capacitance.

Nagata teaches a method comprising means for overlapping a voltage to the driving circuit of the scanning signal via the storage capacitance(see figures 1, 8-11; constitution and paragraph #3 of the present application). It would have been obvious to have modified Shibusawa with the teaching of Nagata, so as to decrease of the

picture signal voltage, decrease of the driving electric power, improve the response speed and driving reliability(see paragraph #3 of the present application).

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moon(5,793,346) teaches an LCD display having a capacitance(Cst) connected to a previous gate line.

Johnson et al(6,329,976) teach an LCD display having auxiliary capacitors.

Hebiguchi et al(6,433,764) teach an LCD display having a capacitance connected to a previous gate line.

#### ***Allowable Subject Matter***

9. Claims 1-10, 30-31, 37-52, 54-59, 61-62, 65, 68-75 and 78-82 are allowable since none of cited references teach the capacitance ratio( $agd=Cgd/Ctot$ ) is varies according to the distance from the power feeding edge of the scanning electrode; or the first capacitance ratio agd and the second capacitance ast having a different value according to the scanning electrode to the storage capacitance is connected.

10. Claims 12-20, 24, 21-23(claim 21 depends on one of claims12-17), 25-29(claims 21 and 27 depend on one of claims 12-17), 63-64, 67 and 77 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

independent form including all of the limitations of the base claim and any intervening claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi, Lao whose telephone number is (703) 305-4873.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at (703) 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

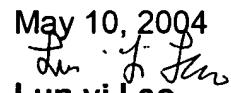
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

May 10, 2004  
  
Lun-yi Lao  
Primary Examiner